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PROCEEDINGS OF THE PARIS ANTHROPOLOGICAL SOCIETY.*

M. BONTÉ after referring to what he had stated at a previous meeting, namely that he considered the Celts to have been a brown, and the Kimris a light coloured race, would confine himself for the present to replying to certain assertions made in the course of the debate. And first he considered the pretended brachycephaly of the so-called pre-Celtic race as unproved. He would admit they were a brown race, as everything indicates their having been of the Iberian stock, but nothing shews that they have been exclusively brachycephalic, there being no proof that the Iberians were exclusively brachycephalic. . . . Neither must we because Dr. Thurnam found in England brachycephalic crania in monuments of the bronze-age apply his discovery to Gaul. He had never put much faith in absolute propositions in systems in fact, hence he had already, before M. Broca communicated to the society the discovery of Dr. Thurnam, regarded the conclusions of M. Retzius and his disciples as very hypothetical. He would now come to another point. The partisans of the Aryanism of the modern French have attributed to the Aryan race a numerical preponderance over the pre-Celtic race. There is no record in history of a conquering race having exceeded in number the natives of any country. Even the army of Xerxes, the most formidable in number, exaggerated no doubt by ancient historians, was still inferior to the European, Asiatic and insular population of Greece. It was said at the last meeting that the Aryans had exterminated the indigenous race of Gaul. W. Edwards had already observed that such cases of extermination were unexampled, inasmuch as the conqueror generally prefers to make slaves of the vanquished. It had also been stated that the Roman influence in Gaul was insignificant, and that the army of occupation of the Romans consisted only of four legions, each of 6,000 men. But it has not been taken into consideration that this occupation continued during five centuries, so that the influence of but 24,000 must within such a space of time be enormous. But the great pivot of Aryanism is philology.

It is said, Celts, Germans, Slavonians, Greeks, Romans, Scandinavians, Dutch, Persians, Hindoos, etc., speak idioms derived from the Sanscrit, consequently they must be Aryans. He was opposed to a system tending to constitute a proof of what the bones and the flesh of a people had been. The Aryanists when they perceived the break

* Continued from No. xiv, p. 288.

down of their argument, turned round and endeavoured to prove *anatomically* the value of philology. In order to arrive at such a demonstration the philologists imagined that the Aryan race possessed three principal forms of crania, the dolichocephalic, the brachycephalic, and the orthocephalic. Dolichocephalic, the Celts, Scandinavians, Frisians, Dutch Slavonians; brachycephalic, the Southern Germans and Slavonians; orthocephalic, the Greeks, Persians, Romans. If linguists were for a moment to forget philology they would be much embarrassed to justify so arbitrary a division. The only plausible reason which they give us is this: that three principal forms are now observed among the people speaking languages derived from the Sanskrit, and thus they give to the Aryan cranium a more or less multiple form just as philology requires it. Everyone must see at once how vicious such a mode of reasoning is. In the first place three forms of crania in one race sufficiently prove a diversity in blood (the principle that the diversity of form proves diversity of race has been numbers of times laid down by M. Pruner-Bey himself). Thus we have the pure Mongol race of which the Kalmuck is the type, which presents but one form—the brachycephalic. There is no dolichocephalic Kalmuck.

The negro race also presents but one form—dolichocephaly. There is no brachycephalic negro. Each of these stocks when pure has its proper form, why should it not be so with the Aryan race? History replies, intermixture has done it. But we have not only to do with *three* forms, for each of these three forms may be again subdivided. Thus the Roman oval is not the Persian nor the Hindoo oval; the Greek form is neither the Celtic nor the Scandinavian form, the Slavonian and Germanic crania are now dolichocephalic and few brachycephalic, and so it is with French and other crania. The Aryan oval has thus nothing peculiar; and the Finnish, Basque, and Arab ovals are as much oval as the Roman oval, which is presented to us as one of the prototypes of the oval Aryan cranium.

We would now part with the craniological characters and pass to others. If an anthropologist were to present to us a Mulatto, the issue of a Negro and a white woman, as the type of the Negro, we should simply laugh at him. Well, the system of philologists leads to the same thing; for there is perhaps less difference between such a Mulatto and a Negro than between the races called Aryan. Commencing by the face, compare the Slavonian face with that of a Persian, Roman, or Greek, or that of the Hindoo with the Celtic face, or the Scandinavian with the Hindoo or Greek face. The constitutions equally differ; and as to the coloration there is nothing more unlike.

To cover this heterogeneity it is simply said that the Celts, Ger-

mans, Slavonians, Greeks, etc., *resemble more the Hindoos than the Negroes and the Mongols*. Nobody doubts this, but this proves nothing. The Arabs, the Finns, the Basques, etc., are in the same condition, why exclude them from the Aryan group? The answer to this is always the same: philology requires it. But whilst there are writers who make light of these objections there are others who consider them sufficiently important to endeavour to explain them. Thus, Clavel (*Des Races Humaines*, etc.) and Prichard, tell us that the Aryan branch which peopled Northern Europe came by the country north of the Caspian, where the Mongolian race was already established, with which they intermixed; hence brachycephaly among some Aryans. As regards the second branch which peopled Southern Europe, that passed by Asia Minor, the Hellespont, and the Bosphorus; and M. Clavel adds that meeting here with the Semitic race they intermixed; hence the dolichocephaly in the Aryan race. Thus even according to M. Clavel, who is an Aryanist, the famous race when it arrived in Europe was no longer pure Aryan. All this proves that the Aryan theory is not satisfactory even to those that profess it, and those only make light of the objections to it who have only studied one side of the question. Finally in England that country of positivism and of cool reflection, the theory of Aryanism is much shaken and scarcely exists in form of a system.

The meeting then adjourned.

August 4, 1864.—M. Quatrefages presented to the society a memoir by M. Boucher de Perthes, “sur les ossements humains trouvés en 1863 et 1864 à Moulin-Quignon dans un terrain non remanié.” Report on the Excavations of Chamant (stone period). The sepulture of Chamant (long-barrow stone period) has already been described (Bulletins 1, iv). The excavations interrupted during the winter have been resumed May 16 in the presence of Count de Lavaulx and many members of the society. The following objects were found in the last two chambers:—1. A magnificent flint hatchet, marvellously polished, the edge of which was still very keen. 2. Several bones of domestic ruminants. 3. A fragment of the jaw of a badger. 4. Fragments of rude pottery dried in the sun. 5. A large quantity of cinders and of wood charcoal. 6. Some carbonised bones of mammals. 7. Fragments of flint arrows and a large number of unworked flints, but which had evidently been deposited in the grave as none of them are found in the vicinity. 8. A large number of fragments of a greenish-grey stone, which when rubbed, and still more so when broken, exhales a strong odour of hydro-sulphuric acid. There exists no such stone in the vicinity. Some of the fragments are very small, others weigh above a kilogramme. No trace of metal was found. . . . The human

bones are very numerous ; two crania only have preserved their shape though they are much decayed. One belonged to a child about seven years of age. The second skull of an adult male about thirty years of age had lost a portion of the face and one of the temporal bones ; the cranium is oval, the frontal region much developed, the occipital region is still more so. The mastoid apophyses are long and voluminous, the occipital protuberance but little projecting, the occipital foramen is large and oval. Antero-poster. diameter maxim., 190 ; transv. maxim., 142 ; cephalic index, 74.73 ; vertical basilo-bregmatic diameter, 137, vertical index of the cranium, 72.22 ; frontal diameter minim., 90. This cranium is thus dolichocephalic. Among the other three crania already mentioned (Bullet i, v) No. 2 is still more dolichocephalic, the two others are mesaticephalic. On the whole, of the four crania of Chamant two are decidedly dolichocephalic and two mesaticephalic. The absence of brachycephalic crania in this grade of the stone period is noteworthy. The long bones are generally of small dimensions. Everything indicates that this people were of a stature shorter than ours. All the humeri have been collected to study the question of the olecranian hole. Of thirty-four humeral bones from the sepulchral cavern of Orrouy (bronze age) eight presented a natural perforation in the olecranian fossa. In order to properly appreciate this fact it must be remembered that in the Merovingian sepulture of Chelles there were in 1,000 tombs which had been opened only five perforated humeri found (four of these are now in the museum of the society).

It is natural to ask whether this anomaly so rare at present may not at a remote period have been prevalent among the autochthonic races ; but the facts do not yet authorise us to infer that there existed in this region a race characterised by a perforation of the olecranian fossa. In order to explain the frequent occurrence of this anomaly in the bones found at Orrouy, M. Broca thinks that it might have been the burial place of a family or of a small tribe in which by consanguine intermarriages this anomaly had become hereditary. Only one entire tibia has been found at Chamant, but tibial diaphyses were found in large numbers. M. Lagneau on this occasion made the interesting observation that the crest of the tibia was sharper than in those of modern skeletons, and that the diaphysis presents the form frequently seen in rachitic children. But the tibias of Chamant are not rachitic, and their conformation is not pathological. This observation has acquired some importance since the excavations made in the caverns and the osseous breccia of Gibraltar have furnished tibias similar to those found at Chamant, which results from an article by Mr. Busk in the *Reader*. The bones of Gibraltar seem to have been contemporary

with the rhinoceros, and are much older than those of Chamant, which date only from the *polished* stone period.

M. Broca read a paper *on the condition of the crania and skeletons in ancient graves*.—In crania taken from the earth and preserved for some centuries in ossuaries there is generally found a little dry mass of the volume of a walnut or an egg, sometimes hard and moveable, and frequently difficult to extract, which constitutes the desiccated and mummified brain. But when the cranium lies in the earth the cranium is filled up, which contributes not a little to its preservation. The excavations made in August and September 1863 in the Merovingian cemeteries of Cheller and Champlieu and those previously made by M. de Roucy in the Gallo-Roman cemetery of Mount Berny enabled M. Broca to study this question and to describe some curious phenomena.

At Mount Berny most of the bodies were deposited in graves and then covered with a sandy earth. These crania were found full of earth and a small quantity of fragments of stones which could easily be extracted. But at Cheller and Champlieu most of the bodies, according to the custom of the Merovingian period, had been deposited into stone troughs, some monoliths, some formed of two pieces, all covered with a large slab under a bed of vegetable earth, the thickness of which varied from fifty centimeters to one meter. The skeletons found in these graves were greatly altered and crumbled into pieces at the slightest contact. Their colour was yellowish red, they were extremely light, and their compact tissue decomposed into laminæ and foliated. This alteration is apparently owing to an interstitial development of small crystals of acid phosphate of lime. It is exclusively observed in close graves in which the bones after the decomposition of the flesh come into contact with a confined air.

In the graves where there is a sufficiency of earth to cover the skeletons the bones are much better preserved. The crania which were filled with earth were generally best preserved. The substance which they contained was so compact that it took time and patience to extract it by the introduction of a pointed stick into the foramen occipitale.

In certain crania, fragments of stones were found so large that they could only with great difficulty be dislodged. All objects found in the graves were also found in the crania, such as nummulites, snail shells, human teeth, phalanges, and in one case in a perfect cranium a piece of parietal bone four centimeters long and three and half centimeters broad. What most had struck him was the size and the number of solid bodies found in the crania. Both the stones and the bones found in them are deposited in the museum in separate packets.

M. Pouchet said that he could confirm what M. Broca had stated as to the introduction of foreign objects. He found at Rouen in the diluvium amongst other bones the femur of a horse. On shaking it he heard a noise denoting the presence of a foreign body though no external aperture could be detected. He subsequently traced the noise as due to the presence of a small fluviatile shell, which evidently could only have entered by the nutritious canal of the bone as no other aperture could be seen.

On the Frontal Region in Man and the Anthropomorphous Apes. By M. GRATIOLET.—M. Gratiolet called the attention of the Society to a fact which in his opinion had not hitherto been properly estimated, namely to that part of the face called the forehead, which is usually limited below by the superciliary arches and above by the implantation of the hair. We ought not, however, to confound the frontal bone which is found in all vertebræ with the forehead, which imparts to the face its intellectual physiognomy, which should only apply to that part of the frontal bone which covers the anterior lobes of the brain. He insisted upon this distinction because it had not been taken into account in the attempted approximation of the anthropomorphous apes to man. On examining a human cranium it will be found that the superior orbital plate is entirely covered by the brain, and that the curve of the frontal bone is, so to speak, moulded by the projection of the anterior lobes of the brain, so that in man forehead and frontal bone are nearly synonymous. On examining, however, the crania of the chimpanzee and of the gorilla, it will be found that in the chimpanzee the brain covers only the posterior third of the orbits, and that the two anterior thirds are covered by the development of the frontal sinuses. This disposition obtains still more in the gorilla, and in some the orbits are beyond the plane of the cerebral mass, the volume of which is thus greatly reduced. This may be demonstrated by a simple experiment. On driving a metallic pin into a human cranium above the superciliary ridge it will enter the cranial cavity. In the chimpanzee it may do so by giving the pin an oblique direction, but in the gorilla, after traversing the frontal sinuses, the pin does not enter the cranial but the orbital cavity. We may thus say that the chimpanzee has a forehead, though much smaller than that of man, whilst the gorilla is entirely deprived of it, and is only a well characterised Cynocephalus. In the profile of the chimpanzee we perceive a certain curvature which tends to diminish prognathism, whilst in the gorilla the line of prognathism is regularly continued from the summit of the frontal bone to the free extremity of the teeth, being only interrupted by the excessive prominence of the superciliary arches. The cranium of the chimpanzee thus more resembles that of man than the cranium of the gorilla.

On the Celtic Question. By M. PRUNER-BEY.—A tribe of Germans gave, within historical times, its name to the French nation. A Scandinavian tribe gave its name to the Russians. These denominations given by foreigners, of which there exist many examples, are sufficient to show that political names are, so to speak, owing to mere chance. Placed between the above-mentioned empires, Germany has also undergone its vicissitudes of denominations. Its modern name in French is derived from the confederation of some tribes (Allemanni) comprising scarcely the fourth of the Germanic peoples, and who themselves had originally no comprehensive name. It was only in the ninth century that the name *diotisc* (deutsch) designated the German idiom. The ancient name of *Germani* is only found in literature. The name of *Germani* is scarcely of German origin; it signifies in the Celtic languages *neighbour*, and was at Cæsar's and Tacitus' time applied to some small tribes (Tungri, Condrusi, Eburones, Pæmani, Segni) settled on the Rhine. Even some veritable Celts went by the name *Germani* (Oretani). This name, which had thus at first but a partial signification, became among the Romans and Greeks a general term for Gauls. After giving some further examples of the origin of Ethnic names, M. Pruner-Bey said that as a base of discussion on the Celts, he accepted the following conclusions arrived at by M. Brandes.

1. Before the conquest of Gaul by Cæsar, the Gauls and the Germans were too little known to enable the writers of that remote period to distinguish these two nations.

2. The Ethnic trunk, which now we term Celts, is the most western among the Indo-Europeans, and occupied at Cæsar's time a great portion of Europe, namely the countries on the Danube and some parts of Central Germany, Upper Italy, some parts of the Iberian peninsula, Gaul, and the British islands.

3. The elder branch of the Celtic stock, which advanced first towards the west, is the Gadhélic branch, which already, at the time indicated had been drawn back by the Kymric branch.

4. Already at the beginning of our era the Gadhéles occupied only Ireland and Scotland north of the wall of Severus. It is nevertheless possible that in southern Gaul some remnants of the Gadhélic people had maintained themselves.

5. In Britain, south of the wall, dwelt the Kymris, immigrated from different regions of Gaul, and chiefly from Belgium.

6. The Celts settled in continental Europe were Kymris, excepting some Gadhélic remnants in southern Gaul.

7. The Gaulish Celts had in the south intermixed with the Iberians, and in the north with the Germans.

8. Some of the Belgian tribes must be considered as Celticised Germans.

9. Remnants of the ancient Gaulish language and of Neo-Celtic idioms are met with in the French language and in the *patois* of the south.

10. Although the Celtic Britons had partly immigrated from Brittany, their affinity with the ancient Gauls is very probable.

Having thus given a succinct account of the results arrived at by modern science as regards the Celts in general, he would first throw a glance on the most illustrious branch of the Celts—the Gauls. And, first, as regards their language and monuments, he would quote the words of Houzé (*Etude sur la Signification des Noms de Lieux en France*, 1864), “When you tell me that our language, as well as our soil, is almost entirely deprived of Celtic, pre-Roman, essentially Gaulish monuments, I stop you short at once by requesting your attention to another species of linguistic medals, which, though they have undergone greater modifications than the names of individuals, are still distinctly recognised by a patient and scrutinising eye, and these are topographical names.” And, in fact, the soil of France is covered with names which prove the presence of the Celts in masses, and the nature of their language.

M. Pruner-Bey then proceeded to compare the phonology, grammar, and vocabulary of the French with those of the Celtic language. As regards the vocabulary, he observed an erroneous idea had become current, namely, that but a small fraction of Celtic words could be traced as existing in French. M. Brandes has collected not less than four hundred French words which belonged to the Celtic idiom. Even this list seemed to him too restricted; for he felt sure that a considerable number of words not contained in the above list will be found to be of Celtic origin, though not yet acknowledged as such. . . . the French language, is compared with its neo-Latin sister languages, eminently Celtic and Gaulish. As regards Celtic archaeology, he agreed with M. Bertrand that we must not look for the ancient Celts in the large dolmens. He believed, on the contrary, that where in our western countries we find cremation, urns containing ashes and bones more or less calcined, traces of agriculture and objects in bronze and copper, the presence of the Celt is more than probable; as the historical documents show that the Celt was in possession of these materials. . . . But, though everything indicates that in western Europe the Celts knew the use of metals, they did not at a remote time possess them all at once. Thus M. Wilde, speaking of Ireland, perhaps the most Celtic of all countries, says, that the transition from rude flint implements to metal objects must have been very gradual. That metal

was used by the king and the chiefs, and that stone weapons were in Ireland still in vogue in the ninth century by the side of iron weapons.

As regards Gaul, M. Martin represents the polished stone hatchet as characteristic of the Gauls. Archæology, proceeded M. Pruner-Bey, requires the assistance of anatomy in order to classify the human remains found in the graves with the objects which accompany them. The intermixture of the Celts with other peoples had already been recognised in antiquity. Thus there are cited Kelto-Iberians, Kelto-Ligures, Gallo-Greeks, Kelto-Scythians, to which he would add Kelto-Romans, Kelto-Germans, etc. This applied to the continent. As regards the islands, Tacitus, whilst recognising the resemblance of the Britons to the Gauls, and that of the Caledonians to the Germans, clearly separates the Silurians. We have no record as to Ireland, but from tradition we may infer the existence of at least two populations differing in colour apart from the swarms of immigrants mentioned in history and tradition. . . . Linguistically the Iberians are of right the oldest; for their language is not only a primitive language, but it also bears the stamp which characterises the hunting peoples of the new world. By an inconceivable inadvertence the Ligures and Iberians have been held of no account in a certain region of literature, and there were substituted for them the Gaëls, which have scarcely any historical existence on the Continent. The classification into Gaëls and Kymris has only a linguistic value. The Gaëlic, as a language, exists only in Scotland and Ireland. In this respect all the Celts of the Continent belong to the Kymric branch. A single branch among the Celts call themselves historically in their traditions *Kymro*; this is one of the tribes inhabiting Wales. There is no historical document which authorises us to divide the continental Celts into Gaëls and Kymris. Hence the confusion in the ethnogeny of France. He would, on the one hand, reinstate the Iberians and Ligures, and would, on the other hand, insist on the essentially Celtic and Aryan character of the great man of the French nation. The physical type of the ancient Celts (Gauls) can, as regards the ensemble of its character, scarcely give rise to any discussion, as the testimony of antiquity is unanimous in this respect. The form of their cranium presents almost the same type everywhere, as shown by the results obtained by anatomists who have paid special attention to craniology. . . .

Have the Celts inhabited the north, and especially Scandinavia? The historians, archæologists, and anthropologists of Scandinavia, excepting M. Worsaae, who substitutes for them the Goths, but gives no reasons, reply in the affirmative. The religious rites, as well as

the topographical names which they have left behind them, are, according to the Scandinavian authorities, Celtic. Moreover, the cranial type, and the height of the skeletons, seem to confirm it. There exist, moreover, two historical facts which deserve our attention. Tacitus places the Gotini in the north of Germany in proximity with the Guttones (Germans). He considers their idiom as being Celtic, and says that they worked iron mines. He also reports relative to the *Æstii* (Zeus places these among the Lithuanians), settled at his time on the shores of the Baltic: "*Æstiorum gentes . . . quibus ritus habitusque Suevorum, lingua Britannicæ propior. Insigne superstitionis formas aprorum gestant. Rarus ferri, frequens fustium usus. Frumenta ceterosque, fructus patientius quam pro solita Germanorum inertia laborant. Succinum glesum, vocant.*" Thus the language, the religious symbol of the boar, the club of a Gaulish Hercules, the term *glesum*, so deeply rooted in the Celtic languages, etc., all this is found in the same people. Can this be by mere chance?

M. Bonté, at a previous meeting, in order to combat the unity of the Aryan race, said: "The Negroes are dolichocephalic, the mongrels brachycephalic. Why should the Aryans present different forms of crania?" Now, what is applicable to one race is not necessarily applicable to all. Moreover, he contested the fact especially as regards the Mongols. Most of the Chinese and the Tunguses are dolichocephalic as well as the Vogules, who, according to De Baer, are eminently so. And the most homogeneous branch of the Aryan family, namely the Germans, also offer diversities in the cerebral cranium. From this fact we must infer that whatever may be the importance of this portion of the skeleton in other respects, it has only a secondary value when all the other characters agree, as is the case with the Celts, Germans, and Slavonians. M. Bonté said, that the latter resemble more the Mongols than the Scandinavians. Let him furnish us with the proofs. As regards the Basques, they are at present too much mixed; we must, on this question, before all, find the primitive Iberian type, which in respect to the cranium, is still under discussion.

With regard to the so-called historical data concerning the intermixture of the Aryans during their emigration from Asia to Europe, they are altogether apocryphal. Most anthropologists agree that there exist typical forms in all the branches of the Aryan stock, types which still persist despite that intermixture is in full activity. M. Pruner-Bey, after proceeding to discuss the question of the Aryans of India with regard to purity of blood and intermixture, as put by M. Bonté, continued: According to M. Bonté, different form of

cranium—different origin ; different colour of hair—different origin ; different stature—different origin, etc. Whither would such propositions lead if applied to ourselves. We do not resemble each other in the sense M. Bonté takes it. We consequently ought to be the representatives of a number of races, if not of species. In his essay on the *Unity of the Aryan Race*, he had insisted on the differences subsisting between the branches of the Aryan family. We must, however, take care not to exaggerate and compare only what is comparable. Thanks to M. Quatrefages, he had been enabled to compare a very ancient cranium of a Greek female with that of an ancient cranium of a Celtic female. After giving a detailed account of the structure of these two crania, illustrated by a table of comparative measurements, M. Pruner-Bey said in conclusion : Let those who would sift the question inspect my tables representing the measurements of individual crania, race by race, as deposited in the gallery, and tell me whether the individual differences in an established race do not present the same limits as those demonstrated in the female crania of two branches of the Aryan race. But when the Celtic woman is found so approximated to the Greek woman, the distance between the Hindoo and the Greek type is comparatively small. Finally, if the ladies of Cachemir are such as described by travellers, and if the Hindoo woman generally is such as depicted by a distinguished artist (M. Petrowich), it is impossible for me to detect an essential difference between her and a nut-brown woman of southern Italy, except that the latter has more *enbonpoint*. M. Pruner-Bey then exhibited a table of comparative measurements of the crania of two females, one of the ancient Celtic, and the second of the ancient Greek race.

M. Leguay presents to the Society several objects found in the excavations made for laying the foundations of the new barracks in the Cité of Paris. In describing the locality, M. Leguay observed: It is noteworthy that the soil of the island called la Cité is formed of alluvium protected by a solid portion upon which the church *Notre Dame* now stands. The soil of this spot presented in the thirteenth century sufficient resistance to build upon it this immense structure. It is now ascertained that this edifice was not, as so frequently asserted, built upon piles. The objects presented consisted of a hand millstone about twenty-three centimeters in diameter, and fifteen centimeters thick, a double antler of the common stag, sawed at its lower part, and probably destined to serve as a handle for some flint or metal instrument ; and a horn belonging, according to M. Lartet, to a young *Bos primigenius*, or *urus*, also sawed at its lower part.

M. Pouchet doubted whether the horn had been separated by a saw ; it would be interesting to examine by what process the section had been made.

M. Leguay then called attention to a discovery made by him at Varenne-Saint-Hilaire of a small monument of the stone period. He could not at present say whether this monument was erected as a memorial, or whether it contains the bones of an individual; he expected to be enabled to give a better description after further explorations.

M. Leguay then showed to the Society the plan he had sketched of this sepulchre, some worked flints of various shapes, a large quantity of unworked small stones found in the earth covering the grave, bones and teeth of ruminants not burned, burnt bones of animals not specified; all these bones were in a fragmentary condition; and, finally, a large quantity of fragments of pottery, broken off from vases belonging to the stone period.

The meeting then adjourned.

August 18th, 1864.—M. Pruner-Bey rectified some passages attributed to him. He is made to say that the antero-posterior diameter of the pelvis of the negro exceeds the transverse diameter; he never made such an assertion, and the passages quoted have no such significance. It has also been stated that the tickets on the casts of the Basque crania deposited by him in the gallery of the Museum had been written by himself, which is not the case as they were written by the employés of the Museum.

Excavations at Chaffant (Vienne).—M. Leguay presented to the Society nineteen flint knives found in the grottoes of Chaffant, collected by MM. Meillet and Brouillet. These objects presented, by their forms, two distinct types. According to his classification of the flints of the stone period, he placed the objects found in the grottoes of Chaffant in the first period of the second epoch, which is that preceding the epoch of polished stones. MM. Meillet and Brouillet have found in these grottoes worked bones, which they intend to describe in a separate work. M. Leguay gave some further particulars in the excavations in the Cité.

The Secretary-General placed upon the table some worked flints sent by M. Meillet, of Poitiers, found in the beds at Pressigny-le-Grand, which gave rise to a discussion. Some particulars about these beds will be found in a subsequent paper by M. Leguay.

A paper by Giustiniano Nicolucci on some Phœnician crania. (Inserted already in the *Anthropological Review*.)

Dr. Barnard Davis's paper on the Neanderthal skull was then read by M. Giraldés, who had undertaken its translation.

M. Broca said: The Neanderthal cranium has given rise to various opposite interpretations; Dr. Barnard Davis has given a new one which deserves consideration. It is certain that the ossification of

some sutures supervening before the complete development of the head may induce considerable deformations. This fact has already been pointed out by Virchow, and is confirmed by several specimens in our Museum. In all these specimens I have remarked that the deformation had for its consequence the destruction of the symmetry of the cranium; it is, however, clear that if the synostosis manifests itself simultaneously and in the same degree in two symmetric sutures, the cranium, though deformed, may preserve its symmetry. The similitude of both halves of the Neanderthal cranium cannot, therefore, be invoked as a decisive objection to the interpretation of Dr. B. Davis; it only tends to diminish its probability. I do not intend here to discuss the Neanderthal question, which is still obscure, and upon which I have as yet formed no fixed opinion, but I take this opportunity to draw attention to a circumstance which, by my own negligence, may have misled Dr. Barnard Davis. I have sent him the casts of some of our crania, and specially that of No. 8 of the series of Orrouy (bronze age). This cranium, the form of which is so remarkable, presented in the place of one temporal squama an aperture of several centimetres which was filled up with pasteboard. The result was, that in the casts the squamous suture appears obliterated, and Dr. B. Davis, to whom I had not communicated this circumstance, naturally concluded that the suture in question had been the seat of a premature synostosis. He was thus led to suppose that the particular form of the cranium No. 8 of Orrouy might, like that of the two crania described by him, be attributed to synostosis. When I was informed by letter of this mistake of mine, I immediately wrote to that effect to our eminent colleague, who at once discarded the cranium. But as his opinion concerning this cranium had already been published in England, I felt bound here to state that the fault was mine. Moreover, the casts of this cranium being now deposited in the principal museums of Europe, it is as well to caution observers against being led into error by the circumstance I have mentioned.

On the Crania of Orrouy. By M. BROCA.—M. Broca having been led to speak of cranium No. 8 of Orrouy, I beg permission to offer some remarks on the truly bizarre conformation of this cranium. The three most striking characters are: the narrowness and small elevation of the forehead; the enormous development of the parieto-occipital region, and the singular flattening on both sides at the level of the parieto-mastoido-occipital suture. This flattening which, by abbreviation, I shall call super-mastoidian, is perfectly symmetric on both sides. I add a fourth character, namely the considerable capacity of this cranium, which measures 1699 cubic centimeters,

i.e., 213 centimetre cubes beyond the mean capacity of modern crania of Paris.

A single glance at this cranium leads to the belief that it is deformed either by some mechanical action or by some pathological cause. The hypothesis of an artificial deformation can be scarcely entertained, for it would require the skill of modern surgical instrument makers to produce a mechanism capable of producing a compression from below upwards, and from the outside inwards at the level of the two sutures which are the seat of the flattening. It is impossible to admit that the ancient population of Orrouy had such means at their disposal, and I may add that among the numerous deformations described by our venerable colleague, M. Gosse, there is none resembling the conformation of the cranium of Orrouy.

The hypothesis of a pathological deformation not by hydrocephaly, of which there exists no trace but of cerebral hypertrophy, might find some support in the considerable development of the internal capacity of the cranium. But on examining the other crania of the series we are led to recognise that this super-mastoidian flattening is an hereditary character in the population of Orrouy. . . . It appears to me very probable that the super-mastoidian flattening is one of those variations which occur accidentally in an individual, and are then transmitted through a number of generations, as observed in polydactyly and other anomalies. Such family characters may, as is well known, survive intermixture, but eventually they disappear. I already had occasion to observe that the cavern of Orrouy seemed to have been the sepulchre of a small tribe, or perhaps of a single family. This is another circumstance supporting this opinion. In this sepulchre of Orrouy were found thirty-two humeral bones, of which eight, now in our museum, are pierced in the olecranian fossa. This anomaly, perhaps not so rare formerly as now in the European races, was very frequent in the population of Orrouy, owing to heredity, favoured probably by consanguinity. It is thus that Tiedemann explained that most of the inhabitants of a small German village presented the anomaly of a premature bifurcation of the humeral artery. I am thus led to believe that the unusual characters of the crania of Orrouy are individual variations propagated by transmission through several generations. This hypothesis seems to me the most probable as these characters are not met with in other localities.

M. Giraldés observed that M. Broca seems to think that strong pressure was required to deform the cranium ; but that he recollected a case of a notable deformation being produced in the cranium of a child in consequence of the retraction of a cicatrice from a burn.

The form of the cranium No. 8 is moreover not so symmetrical as stated by M. Broca. We should be very cautious in appreciating deformations of unknown individuals. A partial hypertrophy of the brain cysts, consecutive to meningeal hemorrhages, hydatids, etc., may produce deformations tending to lead us into error.

M. Broca said that he agreed with M. Giraudeau that apparently slight causes, whose action is continuous, may in time produce considerable deformations; but in the particular case of the crania of Orrouy, the super-mastoidian flattening cannot be considered as pathological; first, because it exists symmetrically on both sides, and specially because it is found in a large portion of the crania of this series.

[*To be continued.*]

ANTHROPOLOGY AT THE BRITISH ASSOCIATION.

WE understand that the President of the Anthropological Society of London has received a large number of congratulations from anthropologists, both in this country and especially from abroad, at the recent recognition of the science of anthropology by the British Association. We feel it our duty to join in their chorus of congratulation, more however from sympathy than from a belief that the present position of the science of man in the Association is satisfactorily or finally settled. The anthropologists have won a great and decided victory. Under such circumstances, it behoves them to be contented at least for a time. There is a very general feeling that things will soon right themselves. The first great step has now been gained, and we venture to assert without fear of contradiction that the real genuine scientific work done in the department of anthropology was not surpassed by any of the sections during the past meeting of the Association. This must be highly satisfactory both to anthropologists and to those of the authorities of the Association who were instrumental in bringing about the recognition of the science of man as a special branch of science.

The Nottingham meeting of the Association was on the whole a decided success. There was an earnestness about the whole proceedings which could not fail to do good to the cause of science. The admirable address of the President, Mr. W. R. Grove, was something which at once gave a tone to the meeting. It will long be remem-